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TITLE: Method for tracking mobile users in a cellular network

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Brief Summary Text - BSTX (5):

Existing cellular systems use the following tracking strategy, known as the geographic-based (GB) strategy: The geographic area is partitioned into location areas, based on the commercial licenses granted to the operating companies. A location area (LA) is a group of cells, referred to as a home-system. The term location area is used by GSM systems, while IS-41 refers to the LA as registration area. Users register whenever they change LA, while within the LA they never register. The implementation of the geographic-based (GB) strategy is very simple: All base stations within the same LA periodically

broadcast a location area code wherein is encoded the ID of the LA. Each user receives the location area code of the LA wherein it is located, compares its last LA ID with the current ID, and transmits a registration message whenever the ID changes. Hence, the user is not aware of its exact location within the LA. When there is an incoming call directed to a user, all the cells within its current LA are paged. Because the number of cells within a typical LA is very large, the tracking cost associated with the GB strategy is very high.

**Current US Cross Reference Classification - CCXR (4):
455/456.1**